

Process Instructions

NuKoat CMZ

Process:

- 1) Clean
- 2) Rinse
- 3) Phosphate with CMZ
- 4) Rinse
- 5) Final Rinse

Clean and degrease using one of NuGen's recommended cleaners. Parts should be then rinsed in an ambient, overflowing rinse tank for 1-2 minutes. Note: avoid dry down between all process stages.

NuKoat CMZ initial bath make-up is 5% by volume. Fill the clean tank about 90% full with good quality water. Add the CMZ and mix thoroughly. Titrate the free and total acid using the following method:

Total Acid Points

Take five mls of CMZ bath into a 250 ml beaker. Dilute with about 50 ml of deionized water and add 10-15 drops of phenolphthalein. Titrate with 0.1N Sodium hydroxide until the pick color remains.

The number of ml of 0.1N Sodium hydroxide consumed multiplied by 2 indicates the total acid points.

Free Acid Points

Pipette 5ml of phosphating bath into a 250 ml flask. Dilute with about 50 ml of deionized water and add 3-6 drops of bromophenol blue. Titrate with 0.1N sodium hydroxide to a blue color.

The number of mls of 0.1N sodium hydroxide consumed multiplied by 2 indicates the free acid

Iron Content

Pipette 5 ml of phosphating bath into Erlenmeyer flask. Add 2 ml of 10% sulfuric acid. Titrate with 0.042 N Potassium permanganate solution until a faint red color persists for about 20 seconds.

The number of mls of 0.042 Potassium permanganate solution consumed indicates the iron content in ml (T)

% Iron = T x 0.047 Maximum Iron Content = 11 ml (0.5%)

BATH REPLENTISHMENT

Total Acid Points

The total acid points are maintained by adding the NuKoat CMZ.

For each total acid point consumed add 0.16 gallons of the NuKoat CMZ per 100 gallons of phosphating bath.

Free Acid Points

If the total acid points are within the range of 35-40, then the free acid points should be within the range of 3-5. A free acid pointage of more than about 5 may require the addition of some sodium hydroxide [NaOH], NuGen pH adjust product, to the bath. Alternately potassium hydroxide [KOH] may be used.

For reducing the free acid concentration by 1 point, add 0.1 gallons of NuGen pH 14 adjust per 100 gallons of phosphating bath.

Add slowly with vigorous agitation, and temperature below 120°F.

Iron Content

Under the same conditions. The iron level may increase in the bath. The iron content can be kept constant by adding oil free compressed air or by using a ventilator stirrer.

After iron precipitation, it may be necessary to de-sludge the bath. Before continuing the operation, titrate the total acid points and the free acid points and replenish to the specified value or neutralize with pH 14 Adjust.

If the iron content is allowed to increase, it will be necessary to decant a portion of the bath and add water to reduce the iron. Afterward the bath should be replenished with NuKoat CMZ to the specified values.

Desludging

The sludge accumulated during phosphating or during the iron precipitation must be periodically removed. This is done via a settling tank. It is also possible to pump the bath solution above the sludge into an empty rinse tank. After returning the clear solution, fill the tank with water to the normal operating level and stir thoroughly. Then determine the total acid points and the free acid points and replenish with NuKoat CMZ to the specified value.

After the Final Rinse we recommend drying the parts with air circulation. Part temperatures should be between 200 – 300°F.

This completes the process. Paint parts immediately after drying the parts.

